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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/179,156	10/26/1998	HIDEKI WATANABE	FUJS-15.541	5362

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EXAMINER	
MEHRPOUR, NAGHMEH	
ART UNIT	**PAPER NUMBER**
2617	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/179,156	WATANABE, HIDEKI	
	Examiner	Art Unit	
	Naghmeh Mehrpour	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC ∋ 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-3, 11-16, 34,** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirai (US Patent Number 5,309,502) and Sevic et al. (US Patent Number 6,069,525).

Regarding **Claims 1-3, 34,** Hirai teaches a radio receiver comprising plural communication systems each of which deals with a radio signal having a different power-density spectrum (cordless and cellular) radio, and an control portion 29 (see figure 1, col 3 lines 30-40, lines 50-63). The controller is used to control the positions of switches and monitors the received signals. Hirai teaches that the control portion select transceiver to be used according to the received signal (col 3 lines 50-64, col 4 lines 1-11, lines 48-60). Hirai fails to disclose that the transceivers includes plurality of amplifier **and having a transistor and a resistance connected to an emitter of the transistor, and each of the resistances has a different resistance value** (col 3 lines 50-64, col 4 lines 48-60). However Sevic teaches an amplifier circuit comprising:

plural amplifiers a selection control portion 102 to select an amplifier a waiting mode corresponding one of the radio communication system mode, **and having a transistor and a resistance connected to an emitter of the transistor, and each of the resistances has a different resistance value (col 2 lines 50-67, col 3 lines 1-17)**, the radio receiving system further comprising:

a control unit 100 which selects, an amplifier based on received radio signal, a radio communication mode from the plural types of radio communication modes, and uses an amplifier corresponding to the selected waiting mode corresponding to the one of the amplifier radio communication mode from the plural types of amplifiers (See figure 1 numerals 104a-104n, 102, Col 5 lines 37-44). Sevic and Hirai both teach a circuit that have control unit and selects different equipment based on the circuit needs. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Sevic with Hirai, it order to enable the users to select any of the dual system that they desire.

Hirai inherently teaches a radio receiver wherein the plural types of the radio communication system comprises a first communication system and a second communication system whose permissible noise signal levels differs from each other, the noise signal being caused to the received signal of itself due to that of the other radio communication systems which differs from the former (Col 3 lines 25-31). Hirai fails to teach that the amplifiers, and each amplifiers being set with a different bias current amount so as to each achieve an operating condition meeting the permissible noise signal level, and the bias current amount of the first amplifier is set greater than of

the second amplifier. However Sevic inherently teaches the amplifiers being each set with a different bias current amount so as to each achieve an operating condition meeting the permissible noise signal level, and the bias current amount of the first amplifier is set greater than of the second amplifier **due to a difference of the resistance value** (See figures 2, 3, col 2 lines 50-67, col 3 lines 1-17, Col 5 lines 7-12, lines 37-42). In Figure 3, Curve 302a is for FM system and 302b for CDMA system, curve 302a shows less current that curve 302B. Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to provide above teaching of Sevic to Hirai, in, order to provide a system that works with different noise level.

Regarding **Claims 11, 14, 16,** Hirai teaches a radio receiver wherein the plural types of the radio communication system comprises a first communication system and a second communication system whose permissible noise signal levels differs from each other, the noise signal being caused to the received signal of itself due to that of the other radio communication systems which differs from the former (Col 5 lines 45-55, Col 6 lines 20-28). Hirai fails to teach that the amplifiers, and each amplifiers being set with a different bias current amount so as to each achieve an operating condition meeting the permissible noise signal level, and the bias current amount of the first amplifier is set greater than of the second amplifier. However Sevic teaches the amplifiers being each set with a different bias current amount so as to each achieve an operating condition meeting the permissible noise signal level, and the bias current amount of the first amplifier is set greater than of the second amplifier (See figures 2, 3, Col 5 lines 7-12,

lines 37-42). In Figure 3, Curve 302a is for FM system and 302b for CDMA system, curve 302a shows less current that curve 302B. Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to provide above teaching of Sevic to Hirai, in, order to provide a system which works with different noise level.

Regarding **Claims 12-13, 15,** Hirai teaches a radio receiver comprising plural communication systems (col 2 lines 59-68). Hirai detecting circuit fails to show that whether the first or second communication system will be used, wherein if the first communication system is detected the output of the distributing switch is switched to the first amplifier, and if the second communication system is detected the output of the distributing switch is switched to the second amplifier side. However Sevic's control circuit 102 is capable to detect that whether the first or second communication system will be used, wherein if the first communication system is detected the output of the distributing switch is switched to the first amplifier, and if the second communication system is detected the output of the distributing switch is switched to the second amplifier, the control circuit determine whether a dual mode CDMA/AMPS mode of operation should be used (Col 4 lines 39-44, Col 5 lines 65-68, Col 6 lines 43-58, lines 1-5). Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to provide above teaching of Sevic to Hirai, in order to provide a dual mode communication system that can operates in two different standards (CDMA/AMPS), and benefit of a high linearity amplifier for CDMA mode, while using operates in AMPS mode with no in-band linearity requirement.

3. **Claims 4-10,** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirai (US Patent Number 5,309,502) and Sevic et al. (US Patent Number 6,069,525) in view of Peterzell et al. (US Patent 5,930,692).

Regarding **Claim 4,** Hirai modified by Sevic does not show that a radio receiver wherein the output selection portion is entered to the down converter IF mixer. The amplifiers are each constructed as one adapted for intermediate frequency (IF) band which amplifies the radio signal of the IF band. However, Peterzell discloses a radio receiver wherein the output selection portion is entered to the down converter IF mixer 705 (See figure 7, Col 6 lines 34-42). The amplifiers are each constructed as one adapted for intermediate frequency (IF) band which amplifies the radio signal of the IF band (See figure 7, numerals 708, 710, 709, 711). Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to provide above teaching of Peterzell to Hirai modified by Sevic, in order to improve the system performance by enhancing the interference immunity without degrading the sensitivity receive signal level.

Regarding **Claims 5, 8-10,** Hirai teaches a radio receiver wherein the plural types of the radio communication system comprises a first communication system and a second communication system whose permissible noise signal levels differs from each other, the noise signal being caused to the received signal of itself due to that of the other

radio communication systems which differs from the former (Col 3 lines 25-31). Hirai fails to teach that the amplifiers, and each amplifiers being set with a different bias current amount so as to each achieve an operating condition meeting the permissible noise signal level, and the bias current amount of the first amplifier is set greater than of the second amplifier. However Sevic teaches the amplifiers being each set with a different bias current amount so as to each achieve an operating condition meeting the permissible noise signal level, and the bias current amount of the first amplifier is set greater than of the second amplifier (See figures 2, 3, Col 5 lines 7-12, lines 37-42) . In Figure 3, Curve 302a is for FM system and 302b for CDMA system, curve 302a shows less current that curve 302B. Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to provide above teaching of Sevic to Hirai, in, order to provide a system which works with different noise level.

Regarding **Claims 6-7,** Hirai teaches a radio receiver comprising plural communication systems. Hirai detecting circuit fails to show that whether the first or second communication system will be used, wherein if the first communication system is detected the output of the distributing switch is switched to the first amplifiers, and if the second communication system is detected the output of the distributing switch is switched to the second amplifier side. However Sevic control circuit 102 is capable to detect that whether the first or second communication system will be used, wherein if the first communication system is detected the output of the distributing switch is switched to the first amplifiers, and if the second communication system is detected the

output of the distributing switch is switched to the second amplifier, the control circuit determine whether a dual mode CDMA/AMPS mode of operation should be used (Col 4 lines 39-44, Col 5 lines 65-68, Col 6 lines 43-58, lines 1-5).). Therefore, it would have been obvious to ordinary skill in the art at the time the invention was made to provide above teaching of Sevic to Hirai, in order to provide a good quality dual system.

Response to Arguments

4. Applicant's arguments filed 5/11/07 have been fully considered but they are not persuasive.

In response to the applicant's argument that the references fails to teach *"a bias current controlling unit controls plural bias currents, each of the Bias currents being different from each other bias current due a different of the resistance values."*

The Examiner asserts that Sevic teaches an improved dual-mode RF amplifier which is both highly efficient and highly linear, and an amplifier circuit having a high linearity mode of operation and a high efficiency mode of operation. The amplifier circuit comprises an amplifier having a variable active device periphery and a variable supply voltage; and a control circuit, coupled to the amplifier, for decreasing the variable active device periphery and increasing the variable supply voltage when in the high linearity mode of operation, and for increasing the variable active device periphery and decreasing the variable supply voltage when in the high efficiency mode of operation. Additionally, the quiescent current may also be varied in order to increase

efficiency even further. The variable active device periphery comprises a plurality of transistor stages. The control circuit decreases the variable active device periphery by biasing off at least one of the plurality of transistor stages, and increases the variable active device periphery by biasing on at least one of the **plurality of transistor stages. Each of the plurality of transistor stages has a transistor output coupled to the variable supply voltage and an input coupled to a signal to be amplified**. The control circuit may be responsive to a mode select signal indicative of the high efficiency mode of operation or the high linearity mode of operation. Sevic teaches a method for operating an amplifier circuit having a variable active device periphery and a variable supply voltage. The method comprises the steps of decreasing said variable active device periphery and increasing said variable supply voltage when in a high linearity mode of operation, and increasing said variable active device periphery and decreasing said variable supply voltage when in a high efficiency mode of operation. Sevic inherently teaches each of the Bias currents being different from each of other Bias current due to different of the resistance values. It is well known in the person of the ordinary art that different stages of the transistor, usually have different resistors, and when the resistor value changes the value of the current/voltage changes.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. **Any responses to this action should be mailed to:**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naghmeh Mehrpour whose telephone number is 571-272-7913. The examiner can normally be reached on 8:00- 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro be reached (571) 272-7876.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NM

June 22, 2007

NAGHMEH MEHRPOUR
PRIMARY EXAMINER